**British Journal of
Political Science**

When Parties Move to the Middle: The Role of Uncertainty

Johannes Lindvall[1]* , David Rueda[2] and Haoyu Zhai[3]

[1]University of Gothenburg, Department of Political Science, Gothenburg, Sweden, [2]University of Oxford, Department of Politics and IR, Oxford, UK and [3]EUI: European University Institute, Department of Political and Social Sciences, Florence, Italy
*Corresponding author. Email: johannes.lindvall@gu.se

Abstract

Political parties face a crucial trade-off between electoral and partisan goals: should they put electoral goals first, pursuing the policies they think will win them the most votes in the next election, or should they put partisan goals first, pursuing the policies their members, activists, and most loyal voters prefer? In this paper we argue that main political parties make different choices depending on the information environment they are in. They have strong incentives to follow the median voter when the median voter's position is well known, but when there is more uncertainty they have strong incentives to adopt policies they prefer for partisan reasons, since uncertainty makes party leaders more willing to bet that the party's preferred policies are also vote winners. We develop an empirical analysis of how the main parties on the left and the right in twenty democracies have changed their platforms from election to election since the 1960s.

It has long been recognized in political science that political parties in democracies face a crucial trade-off between electoral and partisan goals: should they put electoral goals first, pursuing the policies they think will win them the most votes in the next election, or should they put partisan goals first, pursuing the policies their members, activists, and most loyal voters prefer? Understanding how parties balance these two goals is no simple matter. There are many examples of political parties that have changed their policy platforms to become more electorally successful, but there are also many examples of political parties that have not changed their platforms even as their electoral fortunes have waned. Generations of scholars have sought to understand when parties put votes first and when they put policies first.

This paper presents an empirical analysis of how the main parties on the left and the right in twenty rich democracies have changed their platforms from election to election since the 1960s. The analysis is based on the idea that political parties can use the outcome of the most recent election to learn about the median voter's ideological position. We emphasize two sets of findings. Firstly, main parties tend to adjust their policies to the median voter's position in the left-right dimension, as revealed in the previous election, but only if the election outcome provided a lot of information about the median voter's views. Secondly, the ideological distance between the parties tends to increase if the previous election did not reveal a lot of information about the location of the median voter in the left-right dimension (that is, if there is a lot of uncertainty about the median voter's views). Importantly, we find these patterns both in two-party systems and between the large, main parties in multi-party systems.

These results suggest that parties tend to follow the median voter when they have a clear sense of what the median voter's views are, but when they do not they pursue policies they prefer for

partisan reasons. As we explain in the next section, these ideas follow from a model of party competition in which the parties (a) are policy-motivated, (b) care indirectly about winning since it allows them to implement their policies, yet (c) are uncertain about the median voter's views (Roemer 1997; Roemer 2001). In such a model, political parties make different choices depending on the information environment they are in. They have strong incentives to take the median voter's position into account when that position is well known to them, but uncertainty makes party leaders more willing to bet that the party's preferred policies are also vote winners. Building on these ideas, we develop a dynamic argument about how political parties learn from the outcome of the previous election as they decide what policy proposals to put forward. We also develop a new method that can be used to assess how the uncertainty around the estimated position of the median voter depends on the number of parties in the party system, the ideological positions of the parties, and the proportion of the vote that goes to each party.

In multi-party systems, some parties are more sensitive to the trade-off between electoral and partisan goals than others since different types of parties pursue different political strategies (Meguid 2005). Larger main parties that seek to control the government care more about votes and office than do smaller niche parties, which mainly care about policy goals (Ezrow et al. 2011). The ideas in this paper are more relevant for studying main parties than niche parties. Consequently, our theoretical intuitions and empirical analyses focus on the main parties on the left and the right within each country.[1]

The arguments in this paper are related to several long-standing debates in political science. They are generally related to broad discussions about whether parties should be understood as vote-seeking or policy-seeking (Müller and Strøm 1999; Strøm 1990), the distinction between 'swing' voters and 'core' voters (Aldrich 1983; Cox 2009; Cox and McCubbins 1986; Dixit and Londregan 1996; Lindbeck and Weibull 1987; Stokes et al. 2013), the reciprocal relationship between voters and parties (Adams, Merrill, and Grofman 2005a; Erikson, MacKuen, and Stimson 2002), and the dynamic nature of party competition and democratic representation (Adams, Haupt, and Stoll 2009; Adams and Somer-Topcu 2009b; Adams et al. 2004; Soroka and Wlezien 2010; Stimson, MacKuen, and Erikson 1995; Wlezien 1995).

But our arguments are most directly related to the literature on how the electoral performance of parties influences their future policy choices. For example, Somer-Topcu (2009) shows that parties are more likely to change their policies when they have lost votes in the previous election than when they have gained votes. The main distinction between our paper and Somer-Topcu's is that we ask how parties learned from the performance of all parties in the most recent election, and not just their own performance. Another related contribution is Adams et al. (2004), which analyzes data from the Comparative Manifestos Project (as we do) to show that parties respond to shifts in public opinion (measured as voters' left-right placement in the Eurobarometer surveys), but only when voters are moving away from a party's policy position (right parties moderate their policies when public opinion shifts to the left and vice versa). In contrast to our paper, however, Adams et al. (2004) find no evidence that parties change their ideological positions in response to past election results.[2]

Our paper is also related to a growing literature on how particular types of parties such as social democrats, greens, and radical-right populists change their policies between elections (see, for example, Karreth, Polk, and Allen 2013 and Abou-Chadi and Stoetzer 2020). Unlike these recent studies, our paper is concerned with changes that influence the behaviour of all the main parties in the party system, even when they belong to different party families. For

---

[1]We define main parties as those in the left and right with the largest vote share in an election. More details are provided below.

[2]They do find that dispersion in the voter distribution – defined as the change in the standard deviation of the voter distribution in election compared with election – is correlated with dispersion in the electoral positions of parties. We explore this issue in more detail below.

that reason, most of our empirical analyses examine how the main parties in the party system behave, not how individual parties behave. That is something our paper has in common with recent work by Spoon and Klüver (2019), but for these authors 'mainstream party convergence' is an explanatory variable, not an outcome variable as in our paper.

The Electoral and Partisan Goals of Political Parties

A political party is a 'political group that presents at elections, and is capable of placing through elections, candidates for public office' (Sartori 1976, 64). Almost by definition, then, political parties have electoral goals: they wish to compete successfully in elections, win seats in the legislature, and control or influence the government. But those are not the only goals parties have, for modern political parties are complex organizations with many different stakeholders and sometimes conflicting objectives (see, for example, Sjöblom 1968 or Müller and Strøm 1999). Importantly, parties also wish to implement particular policies that reflect historical commitments to ideology and meaningful groups of supporters (members, activists, and loyal voters). The existence of stable ideological and historical connections between parties and some social groups 'not only creates easily identifiable choices for citizens, it also makes it easier for parties to seek out their probable supporters and mobilize them at election time' (Powell 1982, 116).

Canonical models of party competition make strong assumptions about the goals political parties pursue. In the model developed by Downs (1957, 30–1) in the first part of *An Economic Theory of Democracy*, for example, parties are motivated exclusively by electoral goals. By contrast, in the model developed by Wittman (1977) parties are motivated by policy goals. But both Downs and Wittman were acutely aware of the intricate relationship between electoral goals and policy goals: Downs went on to argue that parties cannot send credible signals to voters without being ideologically consistent over time and Wittman emphasized that parties cannot implement their preferred policies unless they win office. Real-world political parties face a trade-off between electoral and partisan goals. They cannot single-mindedly pursue electoral goals without deviating from their earlier policies – disappointing their members, activists, and core voters – and they cannot single-mindedly pursue policy goals without paying a price on election day.

As we explained in the introduction, we argue that main parties prioritize electoral goals if they received a clear signal about the median voter's position in the left-right dimension in the previous election, since this allows party leaders to estimate more precisely the electoral costs and benefits of different policy options. If parties did not receive a clear signal about the median voter's position, partisan goals dominate.[3]

This idea is inspired by a theoretical model of two-party competition that was developed by Roemer (1997; 2001), which in turn builds on the canonical model developed by Wittman (1977). In Roemer's model, political parties are motivated by policy goals – they have an ideal policy they would like to implement – but they also take into account electoral goals since they are only able to influence government policy if they win elections. Crucially for Roemer's argument, the parties in the model do not know precisely what the median voter's ideal policy is; this means that, although different combinations of policy platforms are known to make it more likely that one party or the other will win the election, the outcome is not certain. The most important implication of the model is that the platforms of the parties only converge if the parties know with certainty how the voters evaluate their policy proposals. When the parties do not know the precise location of the median voter in the left-right dimension, the platforms of the two parties diverge. The reason is that when the parties are uncertain, their optimal strategy is to propose a policy that is closer to their ideal point than to the policy they would propose in a

---

[3]For a related argument focusing on the long-run relationship between public opinion, party politics, and the welfare state, see Lindvall and Rueda (2018).

scenario with complete certainty.[4] The intuition is quite simple: when the electoral benefits of following the median voter become less clear to parties, the benefits of sticking to their favourite policies begin to weigh more heavily in their calculations.[5]

We apply these ideas about the relationship between uncertainty and the trade-off between electoral goals and policy goals to the problem of how parties learn from the outcome of the most recent election. That outcome is an important source of information about the ideological position of the median voter in the left-right dimension. If pivotal voters supported parties with left-wing platforms, parties can infer that the median voter had left-of-centre views; by contrast, if pivotal voters supported parties with right-wing platforms, parties can infer that the median voter had right-of-centre views. In other words, by first observing the platforms the parties proposed and then observing how the voters voted, parties can make inferences about both the ideological centre of the electorate and its variance. In the next section, we explain in more detail how we understand this learning process.

There are of course other ways for parties to learn about ideological tendencies in the electorate – including polling and the fortunes of political parties in other countries – but the revealed preference of the median voter in the previous election is a particularly important source of information for parties as they try to balance electoral and policy goals.[6] Each election can be thought of as an experiment in which parties get to observe how voters respond to their platforms as well as the other parties' platforms: parties ignore these realized election data at their peril. Broad ideological tendencies in the electorate are not easily polled when compared with voter intentions, and polling is potentially unreliable given sampling particularities, non-response rates, over-reporting, etc. Moreover, partisan strategic positioning takes time to make policy promises to voters credible (Becher 2016) so parties are likely to think of how to adjust their platforms as a medium-term problem rather than a short-term one.[7]

One potential counter-argument to the idea that parties try to learn from the outcome of the previous election is that it assumes voters' preferences to be relatively constant. According to an important literature in American and comparative politics, voters are quite myopic, especially when they evaluate the performance of the incumbent government: they weigh events in the months leading up to the election much more heavily than events further back (see, for instance, Healy and Lenz 2014; Healy and Malhotra 2009, and Hellwig and Marinova 2015). If voters are

---

[4]To be more specific, the main implication of Roemer's model is that party i proposes the tax rate t that maximizes $\Pi(t_1, t_2, i) = \pi(t_1, t_2)v_i(t_1) + (1 - \pi(t_1, t_2))v_i(t_2)$, where is party's expected payoff, t_1 is the policy of party 1, t_2 is the policy of party 2, v_i is party i's ideal policy, and π is the likelihood that party 1 wins the election (Roemer 1997, 480). In other words, each party takes into account both its own policy preferences (v_i) and the likelihood that it will win the election (π for party 1 and $1 - \pi$ for party 2) when it decides what policy to propose.

[5]Roemer (2001, Chapter 2) discusses several other ways of modeling uncertainty about how the electorate will respond to particular combinations of policies, which is different from modeling uncertainty about the ideology of individual voters (see, for example, Roemer 1994; for a discussion, see Gehlbach 2013). Chappell and Keech (1986) develop a model in which uncertainty between voters about parties, not between parties about voters, leads to a differentiation of party positions. See also Shepsle (1972). Roemer's analysis is related to an earlier paper by Calvert (1985), which also explores models in which candidates are uncertain about the distribution of voter preferences and are motivated by policy. His conclusion is that parties will only diverge if they are both deeply concerned about policy (what we describe in our argument as their partisan goals) and uncertain about the voters' ideal points. The main difference between Calvert's model and Roemer's is that Calvert treats uncertainty and policy motivations as 'mere complicating factors' (86), emphasizing the robustness of Downs's convergence result, whereas Roemer treats party divergence due to these two factors as a regular occurrence in democratic politics.

[6]For an analysis of how political parties learn from parties in other countries, see Ezrow et al. (2021), which argues that 'following the foreign leader can help parties to identify the position of their own domestic median voter and, thus, perform more effectively in elections'.

[7]We share an interest in the relevance of previous elections with an important literature on partisan electoral strategies. In most of this literature, however, the position of the median voter – and the certainty around it – is not important. The emphasis is instead on the idea that the positions parties take in one election are influenced by the success or failure of the positions they took in the previous election and the positions of their direct rivals (see, for example, Adams and Somer-Topcu 2009b; Budge, Ezrow, and McDonald 2010; Somer-Topcu 2009).

myopic, why should parties expect the outcome of the previous election to say anything about how voters will behave in the next election? Our answer to this objection is that, even if voters are myopic when they evaluate adverse events and government performance, their ideological orientations may well be more stable, slow-moving, and predictable. Events matter, but we propose that they represent shocks around a more steady ideological baseline.[8]

As the previous paragraphs make clear, the goal of our model of party competition and party behaviour is to minimize complexity while at the same time striving to generate substantively important explanations of how party platforms change over time. Perhaps the most important simplification is that the political parties in our argument care about a single ideological dimension – the left-right one. There is a rich, growing literature on the multidimensional nature of contemporary politics.[9] But, since we are interested in studying the relationship between election outcomes and party behaviour at the next election in a large sample of countries over a long period, we concentrate on an ideological dimension that has been relevant in the whole sample for many decades. This would be more complicated to do if, instead, we concentrated on other dimensions, the meanings of which vary a lot between countries and between periods. The very identification of a median voter in this multidimensional space would require us to abandon some of the theoretical simplicity we have proposed. Therefore, we leave for future research the question of whether the application of our uncertainty arguments to more complex multidimensional political scenarios would significantly improve the understanding of how parties behave.

We apply the ideas we have developed here in both two-party and multi-party contexts. Whereas numerous studies have found that parties in plurality systems tend to converge on the median voter's ideal point – for example, Feddersen, Sened, and Wright (1990) argue that as long as the policy space is unidimensional, there will be convergence under plurality rules even when there are more than two parties – many scholars have argued that parties do not converge to the electoral centre in multi-party proportional-representation electoral systems (Cox 1990). Theoretical arguments for why parties do not occupy the electoral centre have emphasised the role of party activists (see, for example, Aldrich 1983), directional voting (Adams, Merrill, and Grofman 2005a), and valence (Schofield and Sened 2006). We show that between large, main parties, there is a common pull to the electoral centre in both proportional representation and plurality systems – but only if there is enough clarity about the median voter's position.

Based on the ideas we have discussed in this section, we formulate three hypotheses.

(1) The average left-right position of the main political parties is influenced by the median voter's position in the previous election (when the outcome of that election allowed parties to estimate the median voter's position with precision).

(2) The further an individual party was from the median voter's position in the previous election, the further that party moves in the direction of the median voter (again assuming the outcome of the previous election allowed parties to estimate the median voter's position with precision).

(3) Parties diverge more in the left-right dimension when there is more uncertainty about the median voter's position.

The reason for formulating three separate hypotheses is that our theoretical argument makes predictions both about the positions of the main parties in the left-right dimension (Hypothesis 1), how individual parties change their positions from election to election (Hypothesis 2), and the

---

[8]We test empirically whether the influence of past elections depends on their temporal proximity to the present election. Our results do not confirm the results in Somer-Topcu (2009). We find that once uncertainty is taken into consideration, the effects of the previous election do not dissipate after about 32 months. More on this below.

[9]See Wheatley and Mendez (2021) for a recent contribution.

distance between the parties (Hypothesis 3). Hypothesis 1 is about party positions. On average, do the main parties in the party system move further to the right if they believe that the median voter in the previous election had right-wing views (or vice versa if the median voter had left-wing views)? We expect they do, but only if the outcome of the previous election was sufficiently informative. Hypothesis 2 is about the behaviour of individual parties. Do the main parties on the left and the right approach the median voter if they infer from the outcome of the previous election that their position was far from the median voter's position at that time? We expect that they do, but, again, only if the outcome of the previous election was sufficiently informative. Hypothesis 3 is about the distance between the main parties. Does uncertainty about the median voter's position lead parties to diverge ideologically? We expect that it does.

All these outcomes – position, election-to-election changes, and distance – are substantively important. But while this paper's hypotheses may seem intuitive, it is important to emphasize that they differ from most existing approaches to the behaviour of main parties. One influential piece of literature, for example, argues against the idea that the median voter matters at all. In this framework, governments are responsive to the preferences of economic elites or powerful interest groups, which means that the appearance of popular political influence is illusory and only relevant when it coincides with the views of the privileged (Bartels 2008; Gilens 2012; Gilens and Page 2014). Our results challenge this strand of research, for it seems unlikely that certainty around the position of the median voter is correlated with the preferences of the elite.

Other influential literature argues that the median voter does matter, but not in the manner we emphasize in this paper. For example, the importance of the median voter is implicit in the influential Thermostatic Model, which links public opinion and policy (Soroka and Wlezien 2010; Wlezien 1995), but our main contribution – which is that the uncertainty around estimates of the median voter's position matters greatly to main parties – is missing from this research: there is little consideration of the uncertainty around the thermostatic signal, and information only matters to responsiveness (the public acquires and processes information about policy, and adjusts its preferences accordingly).

We are certainly not the first to emphasize the importance of uncertainty in examining the relationship between voters and parties, but in much of the empirical literature on this topic the focus is on the other side of the relationship. In the words of Ezrow, Homola, and Tavits (2014, 536), 'uncertainty repels voters'. The causal effect of interest in this literature, therefore, goes from the position of parties to the voting behaviour of individuals. The argument that voter support will decrease for parties whose positions are uncertain has a long history in the literature on information and elections (Alvarez 1998; Bartels 1986). The main intuition is that uncertainty about party positions makes it difficult for voters to assess the utility that may result from voting spatially (Alvarez 1998) and may even make the valence evaluations of the party impossible (Schofield and Sened 2006). Some of these authors have argued that centrist positions held by parties generate voter uncertainty while extreme positions produce certainty (Ezrow, Homola, and Tavits 2014).

Several studies that examine the strategic choice between vote-seeking, policy-seeking, and office-seeking pay attention to conflicts within political parties. For example, Budge, Ezrow, and McDonald (2010) and Budge et al. (2012) show that electoral wins and losses affect what parties do since they empower different factions, which then proceed to pull policy in one direction or another. We are agnostic about the precise mechanisms within parties that explain the empirical relationships we study in the paper. There are possible explanations for our findings that are consistent with the arguments made by Budge, Ezrow, and McDonald (2010), but there are also alternative accounts that are not. For example, the finding that parties change their policies when they receive a clear signal about the position of the median voter could be related to the fact that this information empowers factions that wish to move to the centre, but it is also possible that it produces a more uniform shift in views within parties.

Our Empirical Approach

As the previous sections make clear, we would like to test three ideas: when the outcome of the previous election allowed parties to estimate the median voter's position with precision, (1) the average left-right position of the main political parties is influenced by the median voter's position in that election, and (2) individual main parties are more likely to change their platforms in the direction of the median voter the further they were from the median voter's position; moreover, (3) the main parties diverge more in the left-right dimension when uncertainty is high. Our theory, therefore, predicts an interactive mechanism for (1) and (2): when the median voter expresses a strong preference in the election, parties have strong incentives to move in that direction in the subsequent election. But the theory predicts a direct mechanism for (3): a clear signal from the median voter promotes convergence between the main parties. This process involves several aspects of spatial competition on both sides of the electoral exchange: on the explanatory side, the positions of the main parties and the position of the median voter in the previous election as well as the uncertainty around the estimate of the median voter's position, and, on the outcome side, the positions of the main parties in the next election as well as the movement of the parties from one election to the other.

Our approach to estimating the median voter position and the uncertainty around that estimate – which is a more difficult problem to solve – is based on a simple model of how parties can learn about the location of the median voter in the left-right dimension from the outcome of the previous election – a model that relies, in turn, on a method of inferring voter ideology from election outcomes that was first developed by Kim and Fording (2003). We have the following simple process in mind. First, political parties observe the electoral platforms of all parties that competed in the last election and place those platforms – including their own – on a general left-right scale. Next, the parties combine information about the ideological position of each party and the percentage of the vote that went to each of the parties. The parties then make two assumptions that allow them to make inferences about the location of voters in the left-right space: first, that each voter voted for the party he or she was closest to ideologically and, second, that each party's voters were uniformly distributed over an interval that was bounded by the midpoints between two neighbouring parties in an election (except at the ends of the distribution, where the extreme parties in the party system are assumed to capture all voters that have more extreme views than their own). Following this procedure, the parties can estimate the position of the median voter, first by identifying the median party and then by calculating where, among that party's voters, the median voter is likely to be located.[10]

But the result of this procedure is only an estimate of the position of the median voter, not a precise measure, and we can assume that the parties are well aware of this fact. There are circumstances in which the parties can estimate the position of the median voter with reasonable precision. But there are also circumstances in which the information that parties have about the most recent election only lets them make a rough guess about what the median voter's ideological position might have been. Since we argue that uncertainty about the ideological position of the median voter matters greatly to parties, we assume that parties infer not only the median voter's position but also the uncertainty around that estimate from the most recent election. Specifically, we treat the relative frequency density of the distribution as a proxy for uncertainty about the position of the median voter. This measure uses the relative frequency density of the party-constituency interval containing the median voter, with higher values representing greater local density – implying a

---

[10]We are aware of the potential limitations of the Kim-Fording measure. However, we agree with the critical review in Warwick and Zakharova (2013), which concludes that '[f]or some applications, this [the Kim-Fording median's tendency of being partly affected by non-spatial voting factors] may not matter very much. If the objective is to measure policy demands as expressed in voting or simply to control for the "political centre of gravity" the KF median may be an appropriate, or at least an acceptable, choice.' Since the latter is precisely our main goal here, we consider our measure to be appropriate.

greater likelihood of finding the value of interest, in this case, the position of the median voter – and hence greater clarity about that position. The Online Appendix provides a detailed analysis of the reasons for our chosen measure and a comparison with alternative measures. In short, the measure we use has three advantages over other measures. Theoretically, it is the one measure that most closely approximates the idea of signal strength or, put differently, the ease of identifying the source of the signal, since higher local density by definition indicates greater probability at a given point. Empirically, the main advantage of this measure over alternative ones, such as the weighted standard deviation, is that alternative measures usually have a different anchoring point (the mean) that does not conform to our theoretical focus on the median.[11]

The uncertainty around the parties' estimates of the position of the median voter can potentially be influenced by several factors, including the policy positions of the political parties, the electoral support of the parties, and the number of parties in the party system. In the Online Appendix, we provide illustrative examples of how our empirical measures are influenced by each of these factors. Here, in the main text, we concentrate on one of them: the electoral support for the parties.

We begin by considering the leftmost panel in Fig. 1, which describes the baseline scenario. There are three parties, L, C, and R, with vote shares equal to 40, 20, and 40 per cent. Using the method we have described in this section, the parties will infer that the median position is 50 and the uncertainty is 2.[12] Now let us consider what happens if the support for the three parties changes while the ideological positions of the parties remain constant. In the middle panel of Fig. 1, the left-wing party and the right-wing party increase their vote shares from 40 to 47.5 per cent (with the middle party keeping only 5 per cent of the vote). In the right-hand panel, the middle party increases its vote share from 20 to 40 per cent, with the left and the right parties decreasing to 30 per cent each. In all three scenarios in Fig. 1, the estimated position of the median voter is at 50, but the uncertainty around that estimate varies. In the middle figure, uncertainty is higher than in the baseline scenario in the left-hand figure. In the right-hand figure, uncertainty is lower than in the baseline scenario. The intuition is straightforward. Since we are keeping the ideological positions of the parties constant, the relative frequency density of the party-constituency interval containing the median voter increases as the vote share of the party in the middle increases.

The illustration described above may give the reader the impression that our measure of uncertainty is strongly related to the electoral success of centrist parties. We show in the Online Appendix that the uncertainty around the parties' estimates of the position of the median voter is not only influenced by the electoral support of the existing parties, but also by their policy positions and the number of parties in the party system. All three of these factors are of course affected by the existence/success of a centrist party (this is what our theoretical model predicts), but our measure for the uncertainty around the position of the median voter is empirically quite distinct from the success of centrist parties. In the Online Appendix we show that the correlation between median voter uncertainty and centrist party vote share in our sample is very low.[13] In this section of the Appendix we also show a table with country-specific estimates for the

---

[11]This measure is by design the most appropriate for our median voter measure since it is essentially treating the party-constituency distribution as a grouped distribution and the relative frequency density is the classical histogram method for estimating point/interval density in such cases. It also means, however, that the uniform distribution assumed to identify the location of a median voter within a party interval is not extended to the estimation of uncertainty. In other words, we argue that parties assume a uniform distribution for the location of the estimated median voter but they understand that the true distribution within the party interval is unknown and they estimate uncertainty around this position as the frequency of the interval itself.

[12]Evidence from Adams and Somer-Topcu (2009a) suggests that voter preferences tend to be more normally distributed than our scenarios here. However, what we are showing are idealised scenarios meant to illustrate the analytical implication of our model. In other words, we consciously exaggerate the extent of non-normality (skewness and/or non-unimodality) in voter distributions to better convey our theoretical points.

[13]We define a centrist party as one whose left-right ideological position lies between the positions of the main left and right parties in a national election. On average, 73.2 per cent of elections in our sample have at least one centrist party. But the overall correlation coefficient between certainty and centrist vote share is very low.
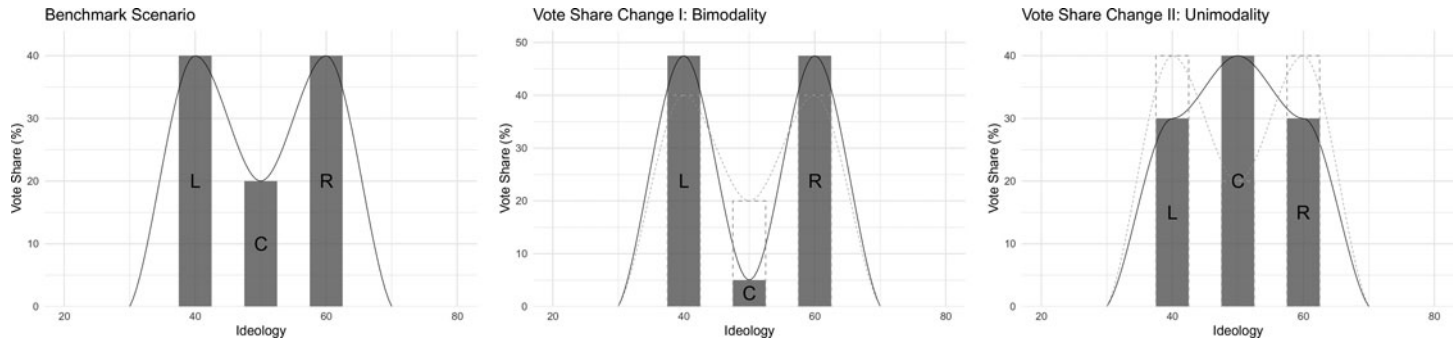
Figure 1. Illustration of the paper's approach to modelling uncertainty.

Note: The left panel shows the baseline case with two main parties symmetrically positioned on the left and right of the left-right ideological spectrum and a smaller centrist party located in the middle. The middle panel shows the case where the centre party loses part of its votes to the left and right parties, who divide this gain equally between them. The right panel shows the case where the centre party gains votes from the left and right parties, who share the loss equally between them. In all scenarios, the median voter is estimated to fall within the centre party's interval, yet the uncertainty around it changes depending on that party's vote share.

correlation between uncertainty and centrist party vote share. In most countries, this relationship is insignificant; however, in Italy and Norway it is significant and positive, while in the Netherlands it is significant and negative. This variation confirms that median voter certainty is not simply a consequence of centrist party success, it also distinguishes our main argument from Adams and Merrill (2006).[14]

In the Online Appendix we show that changing the ideological positions of the parties or adding parties to the party system have equally intuitive implications for the certainty with which the parties can infer the position of the median voter from the outcome of the previous election: convergence promotes certainty, while the effect of the entry of a new party depends on where in the party system the new party positions itself.

Data and Methods

The Comparative Manifestos Project codes the policy emphases of election programs under a large number of separate categories (Volkens et al. 2019). Twenty-six of these categories can be summarized in a Left-Right index, ranging from the extreme Left, −100, to the extreme Right, +100. Numerous studies, including Powell (2000), have shown that the standard left-right scores from the Manifesto Project provide a good summary of what parties stand for in elections and that the left-right dimension is meaningful for voters. There is also evidence in the literature that suggests these scores can be used to predict what parties do when they reach power (Budge and Hofferbert 1990). Furthermore, the left-right index correlates well with various party-classification schemes that are based on expert surveys (see Gabel and Huber 2000).

The data from the Comparative Manifesto Project that we use in this paper come from twenty advanced OECD countries and cover more than 290 national elections from the period 1965 to 2018. These countries include Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Italy, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the UK, and the US. We selected these countries for our main analyses because they have comparable levels of economic development and, most importantly, because the left-right dimension has structured political conflict in all of them (even if other dimensions have also played a role). We have excluded rich democracies in which the main parties are difficult to place in the left-right dimension, such as Ireland. But in supplementary statistical analyses, available in the Online Appendix, we also tested the robustness of our findings over a longer period for a larger sample of countries, and the empirical results that we report in the paper hold even if we go further back in time and include additional countries.[15] When it comes to estimating party positions from the Manifesto Project data – the underlying data merely provide the frequencies of positive and negative mentions in a party's manifesto of a given policy category – we use a simple difference method, identifying the numeric difference between opposing mentions of the same policy category in a party's manifesto as the measure of its policy position. We then check the robustness of our results using the logit scaling method developed by Lowe et al. (2011). This method takes the ratio between opposing (positive and negative) manifesto references in the same policy domain, which is transformed by logit using the resulting log ratio as the measure of the party's position in that domain.

We follow the existing literature and define the main left parties as those on the centre-left of the political spectrum and the main right parties as those on the centre-right. We select the parties with the largest vote share in an election in the socialist/social democratic party family and the conservative/Christian democratic party family as the main parties of the left and

---

[14]Adams and Merrill (but see also Adams, Merrill, and Grofman 2005b; Nagel and Wlezien 2010; Zur 2021) propose that in plurality systems the presence of a centrist third party promotes divergence between the major parties. We show that uncertainty around the position of the median voter promotes divergence even in the significant number of cases in which it is not correlated with centrist party success.

[15]We conduct these robustness tests on a full sample of thirty-four OECD countries from the early postwar years (1945).
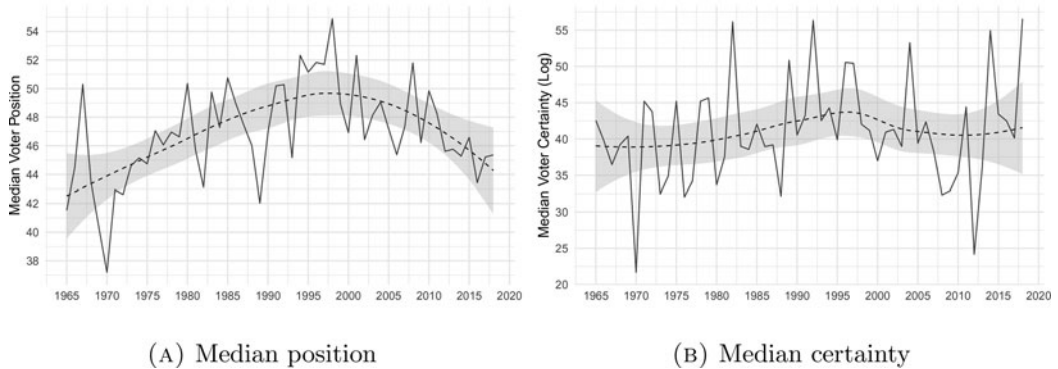
Figure 2. The estimated position of the median voter in the left-right dimension (the left-hand panel) and the certainty around those point estimates (the right-hand panel). Both estimates are measured on the 0–100 interval. Larger values represent more right-wing views (the left-hand panel) and greater clarity (the right-hand panel). Annual averages (the solid lines) and LOESS smoothed trends (Cleveland 1979) (the dashed lines) with 95-percent confidence intervals around the fitted trend lines (the grey areas). MARPOR data 1965–2018.

right (we follow the CMP/MARPOR party family coding). Figure 2 describes the aggregate relationship between the estimated positions of the median voter and the certainty around those estimates throughout the period we analyze in this paper.
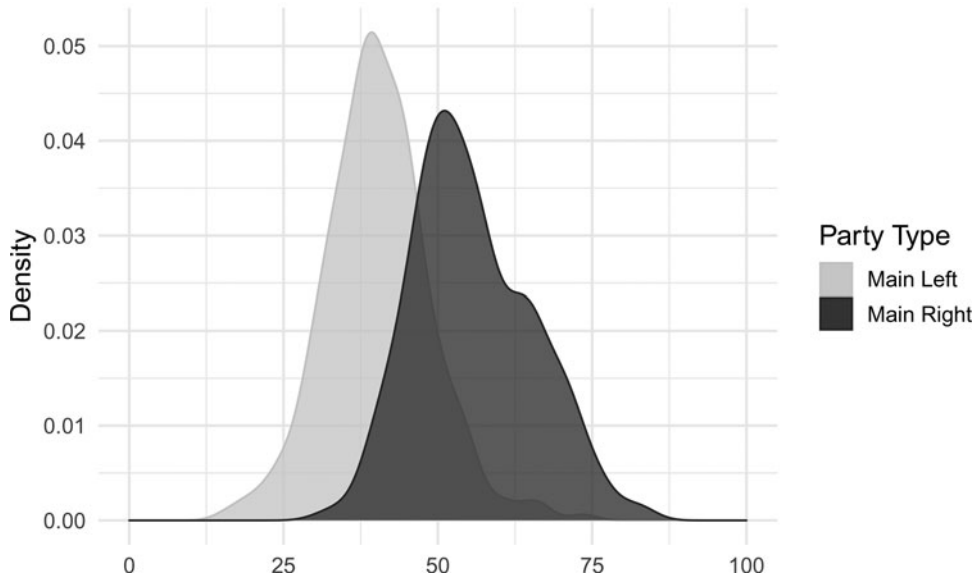
Figure 3 describes the distribution of the ideological positions of the main parties on the left and the right. We define the average position of the main parties as the arithmetic mean of their left-right policy positions (the left-right index from the Comparative Manifestos Project, as explained above). We define divergence between the main parties in terms of the absolute difference between their positions in the left-right dimension. Figure 4 presents aggregate data – again for all our countries from 1965 to 2018 – concerning the average position of the main left and right parties (the outcome variable when we test Hypothesis 1), the distance between them (the outcome variable when we test Hypothesis 3), and the average positions of the main left and main right parties separately (the outcome variables when we test Hypothesis 2).

Empirical Analysis

In this section, we use regression analysis to study the relationships of interest and to control for potential confounders. We begin with our first theoretical claim, which is that the median voter influences the location of the midpoint between the main parties in the subsequent election when the parties receive a clear signal about the median voter's position. The results can be found in Table 1. In the first three columns, we present models with country and year fixed effects. The two-way fixed effects models focus attention on the within-country over-time variation in the data, removes time-invariant heterogeneity between countries, and removes time-specific effects. We use heteroskedasticity-consistent standard errors (the Huber-White estimator). After presenting the two-way fixed effects models in the three first columns, we present lagged dependent variable models in the three last columns.[16]

For both the fixed effects and the lagged dependent variable models, we start with a baseline including only the two key explanatory variables and their interaction. We then present a model that controls for economic factors and the ideological orientation of the governing party (using five-year averages of these variables): government partisanship (the Schmidt Index of cabinet

---

[16]Following Nickell (1981), we estimate a lagged dependent variable model without unit (country) fixed effects due to concerns about bias. Summary statistics for the variables included in our model, including control variables, can be found in the Online Appendix.

Figure 3. The distribution of the ideological orientation of the main parties on the left and the right. Measured on the 0–100 interval. Light grey = main left, dark grey = main right. MARPOR data 1965–2018.

composition), union density (net union membership as a proportion of wage and salary earners in employment), trade openness (imports plus exports as a percentage of GDP in current prices), GDP growth (percentage), and unemployment (percentage).[17] Finally, we present a model with additional controls for electoral turnout and the nature of the party system to account for the strategic context facing the main parties in each election. The presence of more extreme challengers and more overall contestation might promote greater divergence between the main parties. Higher voter turnout, by contrast, might reduce such centrifugal tendencies and promote centrist convergence (Adams, Merrill, and Grofman 2005a). We include voter turnout (in percentage terms), party polarization,[18] dummies for left- and right-wing competitors (parties to the left and right of the main left and right parties),[19] and the effective number of parties (calculated following Laakso and Taagepera 1979).

There are two things to note concerning the control variables before we turn to the main findings. First of all, having a more conservative government in the five years before an election is associated with a more leftist average position of the main parties, although this finding is less robust in the lagged dependent variable models. Second, the existence of electoral competitors to the right of the main parties moves the main parties to the left, and the existence of electoral competitors to the left of the main parties moves them to the right (although this last relationship is less precisely estimated in the lagged dependent variable model).

However, the main implication of the findings in Table 1 shows that there is support for our first hypothesis. Our theoretical idea is straightforward: when main parties can be fairly certain about the median voter's position, we expect it to be a significant determinant of the average left-right position of the main parties in the party system in the subsequent election. This is

---

[17]These variables and the effective number of parties are taken from the Comparative Political Data Set (Armingeon et al. 2012).

[18]This is the square root of the total sum of squared distances of each party's position from the mean position of the party system (scaled by the mid-point of the left-right scale, 50). See Dalton (2008, 906).

[19]This measure is calculated from the Manifesto data, with 1 indicating a left/right party's presence to the left/right side of the main left/right party; the variable equals 0 otherwise.
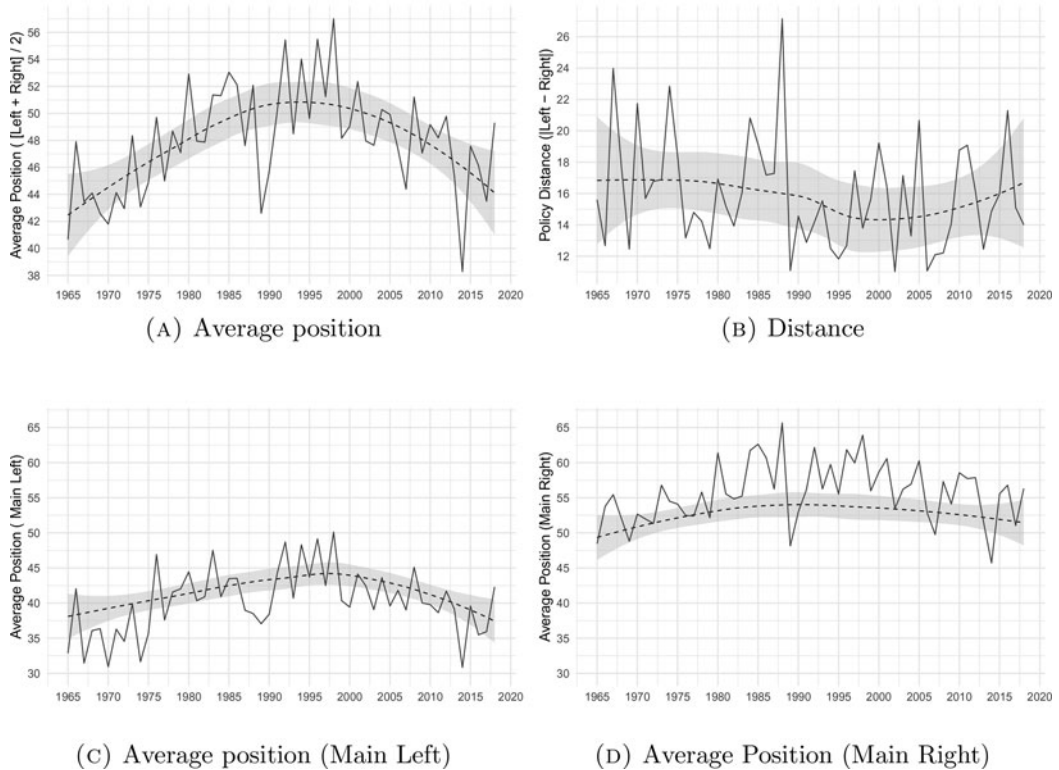
Figure 4. The changing ideological orientation of the platforms of the main parties on the left and the right. Top left: the average left-right position of those parties; top right: the average distances between them; bottom left: the average position of the left parties; bottom right: the average position of the right parties. All four variables are defined over the 0–100 interval. Annual averages (the solid lines) and LOESS smoothed trends (Cleveland 1979) (the dashed lines) with 95-percent confidence intervals around the fitted trend lines (the grey areas). MARPOR data 1965–2018.

exactly what the analyses in Table 1 suggest. The interpretation of the conditional relationship of interest is illustrated in Fig. 5. In this figure, which is based on the most restrictive models in Table 1 (models 3 and 6), we describe the average marginal effect of the previous election's median voter position on the current main party positions, conditional on the certainty around the estimate of the median voter's views. As we expected, the median voter's position in the previous election affects the average policy position of the main parties, but only when there is informational clarity about this position. When certainty about the median voter position is moderately high (for example around 60 in the log scale, as in the 2011 New Zealand general election), a ten-unit move to the right in the ideological position of the median voter in the previous election will move the average position of the main parties by a little over three units (similar to the real-life change in Portugal between its 2009 and 2011 parliamentary elections).

Whereas our first theoretical claim was about the average positions of the main parties on the left and the right, our second theoretical claim is about how individual parties change their positions from one election to another. We expect that the further an individual main party was from the median voter's position in the previous election, the further it is likely to move in the direction of the median voter – assuming, as in our first set of analyses, that the outcome of the previous election allowed parties to estimate the median voter's position with precision. More specifically, let $P_{i,t}$ be party i's position at time t and let M_t and C_t be the estimated position of the median voter at time t and the certainty of that estimate. To test Hypothesis 2, we provide

Table 1. The effect of revealed median voter preferences on the average position of the main parties on the left and right

	FE			LDV		
	1	2	3	1	2	3
Median position × certainty	0.01***	0.02***	0.01***	0.01***	0.01***	0.01***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Median position	−0.46***	−0.46***	−0.37**	−0.67***	−0.52***	−0.49**
	(0.12)	(0.14)	(0.14)	(0.13)	(0.15)	(0.16)
Median certainty	−0.71***	−0.76***	−0.57***	−0.70***	−0.71***	−0.64***
	(0.14)	(0.14)	(0.16)	(0.14)	(0.14)	(0.15)
Average position (Lag)				0.56***	0.30***	0.24**
				(0.07)	(0.09)	(0.09)
Govt. partisanship		−1.32***	−1.17***		−0.59*	−0.45
		(0.29)	(0.28)		(0.29)	(0.30)
Union density		−0.07	−0.11*		0.04	0.004
		(0.05)	(0.05)		(0.02)	(0.02)
Trade openness		−0.01	−0.01		−0.06***	−0.05***
		(0.02)	(0.03)		(0.01)	(0.01)
GDP Growth		−1.12*	−0.86*		−0.72	−0.86*
		(0.44)	(0.42)		(0.41)	(0.42)
Unemployment rate		−0.39	−0.46		−0.23	−0.30
		(0.26)	(0.26)		(0.15)	(0.17)
Left competitor			2.45**			0.62
			(0.92)			(0.86)
Right competitor			−2.89***			−3.00***
			(0.85)			(0.86)
Voter turnout			0.12			0.07*
			(0.09)			(0.03)
Party polarization			0.001			0.07
			(0.14)			(0.14)
Effective N. parties			−0.10			−0.31
			(0.41)			(0.32)
Constant	72.30***	211.65***	183.49***	47.92***	115.23***	100.19**
	(6.03)	(29.59)	(30.14)	(6.32)	(29.69)	(31.06)
Country FE	✓	✓	✓	×	×	×
Year FE	✓	✓	✓	✓	✓	✓
N	298	256	247	297	255	247
R^2	0.55	0.63	0.66	0.45	0.50	0.53
Adj. R^2	0.39	0.47	0.50	0.32	0.35	0.38
Residual Std. Error	5.77	5.42	5.26	6.12	6.01	5.88
F Statistic	3.56***	4.04***	4.08***	3.42***	3.44***	3.39***

Notes: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; Heteroscedasticity-consistent standard errors clustered by country in brackets.

regression models in which $P_{i,t} - P_{i,t-1}$ is the dependent variable (that is, how much the main party i moved to the left or the right from one election to the next) and the main explanatory variables are $P_{i,t-1} - M_{t-1}$ (that is, the distance between this party's position in the previous election and the estimated position of the median voter in that election) and C_t the certainty measure, which we interact with $P_{i,t-1} - M_{t-1}$. The findings are reported in Table 2.

Since we are now conducting separate analyses for the main parties on the left and right, we concentrate on the fixed effects models (the lagged dependent variable models generate similar results). Otherwise, Table 2 is structured in the same way as Table 1: we begin with a stripped-down model without time-varying covariates and then include progressively more control variables in columns 2–3. As the table shows, the empirical findings are very much in line with the theory. The negative interaction terms in the first row suggest that, on average, if a party was far to the left of the median voter in one election (that is, $P_{i,t-1} - M_{t-1}$ is negative), it moved further to the right in the next election (that is, $P_{i,t} - P_{i,t-1}$ is positive) and vice versa, but only if the outcome of the election was informative (certainty is high). The estimated effect

(A) FE estimate

(B) LDV estimate
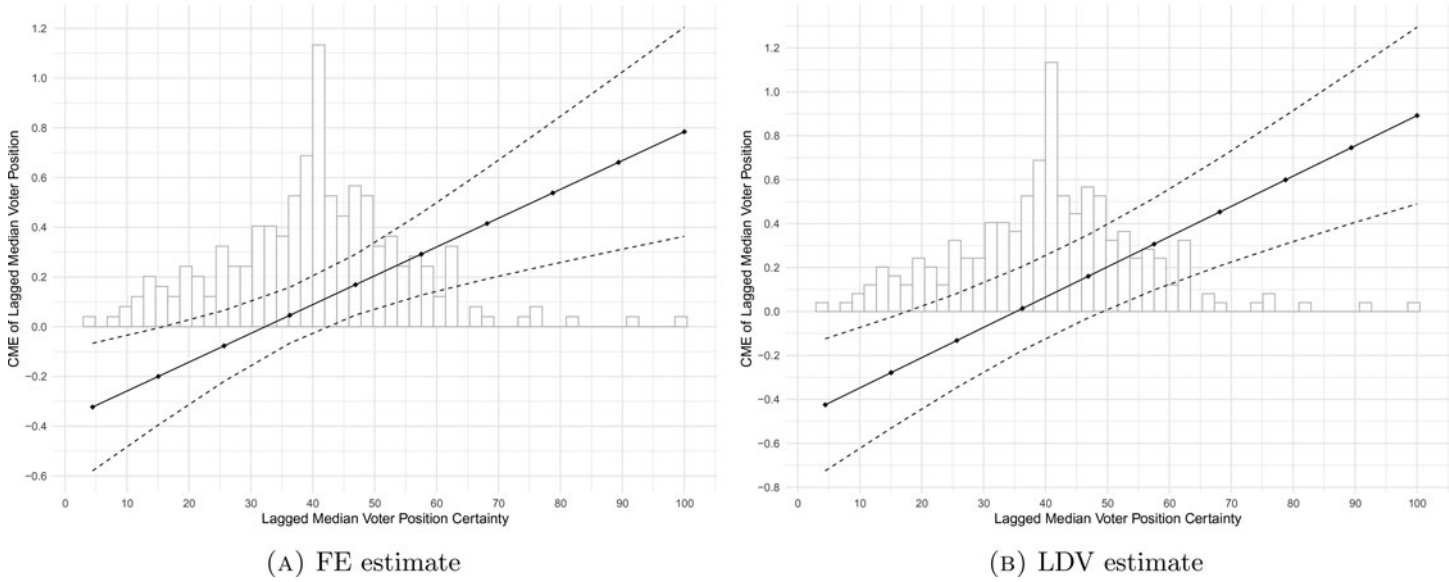
Figure 5. The average marginal effect of the previous election's median voter position on current main party average positions, conditional on previous median voter certainty. Confidence interval estimation with heteroscedasticity-consistent standard errors clustered by country. The effect estimates are shown as diamonds on solid lines, and their interval estimates are shown as dotted lines. The sample distribution of the conditioning variable, which is the uncertainty around the median voter's position in the previous election, is shown by the histogram in the background. Based on models 3 and 6 in Table 1.

Table 2. The effect of the distance between a party's position and the revealed median voter position in one election on ideological changes between elections

	Main left			Main right		
	1	2	3	1	2	3
Δ Position × median certainty	−0.01*	−0.01*	−0.01*	−0.01*	−0.02**	−0.02***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Δ Position	−0.17	−0.12	−0.22	−0.004	0.04	0.18
	(0.25)	(0.31)	(0.30)	(0.20)	(0.23)	(0.23)
Median certainty	−0.07	−0.07	−0.06	0.06	0.06	0.13
	(0.05)	(0.06)	(0.06)	(0.05)	(0.06)	(0.07)
Govt. partisanship		−1.20**	−1.09**		−0.92	−0.85
		(0.43)	(0.42)		(0.50)	(0.46)
Union density		0.06	0.11		0.03	−0.03
		(0.08)	(0.08)		(0.09)	(0.09)
Trade openness		−0.08	−0.05		0.03	0.03
		(0.04)	(0.04)		(0.04)	(0.05)
GDP Growth		−0.96	−0.94		−0.53	−0.02
		(0.64)	(0.63)		(0.73)	(0.69)
Unemployment rate		−0.43	−0.27		−0.70*	−0.61
		(0.38)	(0.39)		(0.32)	(0.32)
Left competitor			5.00***			−4.23*
			(1.22)			(1.68)
Right competitor			0.91			−7.10***
			(1.20)			(1.35)
Voter turnout			−0.12			−0.02
			(0.14)			(0.14)
Party polarization			0.13			0.06
			(0.25)			(0.21)
Effective N. parties			−0.93			0.93
			(0.66)			(0.78)
Constant	−5.24	117.48**	116.05*	1.05	96.10	91.94
	(4.31)	(42.44)	(45.17)	(3.64)	(50.10)	(49.06)
Country FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
N	298	256	247	298	256	247
R^2	0.35	0.40	0.44	0.31	0.36	0.44
Adj. R^2	0.13	0.15	0.17	0.08	0.09	0.17
Residual Std. Error	8.86	8.56	8.54	8.84	9.01	8.65
F Statistic	1.61**	1.58**	1.63**	1.34	1.33	1.62**

Notes: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; Heteroscedasticity-consistent standard errors clustered by country in brackets. Distance = the distance between each party's left-right position in the previous election and the estimated position of the median voter in the previous election.

is slightly stronger for parties on the right than for parties on the left but both sets of models tell a similar story about how parties respond to electoral incentives.

We illustrate the implications of the analyses in Table 2 in Fig. 6. As the figure shows, when there is a lot of uncertainty around the estimated position of the median voter, we find no relationship between the distance of a main party's position in the previous election and the estimated position of the median voter in that election (on the one hand) and how much that main party moved away from that position (on the other hand). But when there is more certainty around the estimated position of the median voter, we find the expected relationship: when a party is far to the left of where the median voter was in the previous election, they move to the right, and vice versa.

Our third theoretical claim is that a clear signal about the median voter's position in the previous election is associated with a smaller difference between the main parties on the left and the right in the present one. The results of our statistical analyses of this relationship can be found in Table 3, which has the same structure as Table 1: first the two-way fixed effects models, then the lagged dependent variable models.
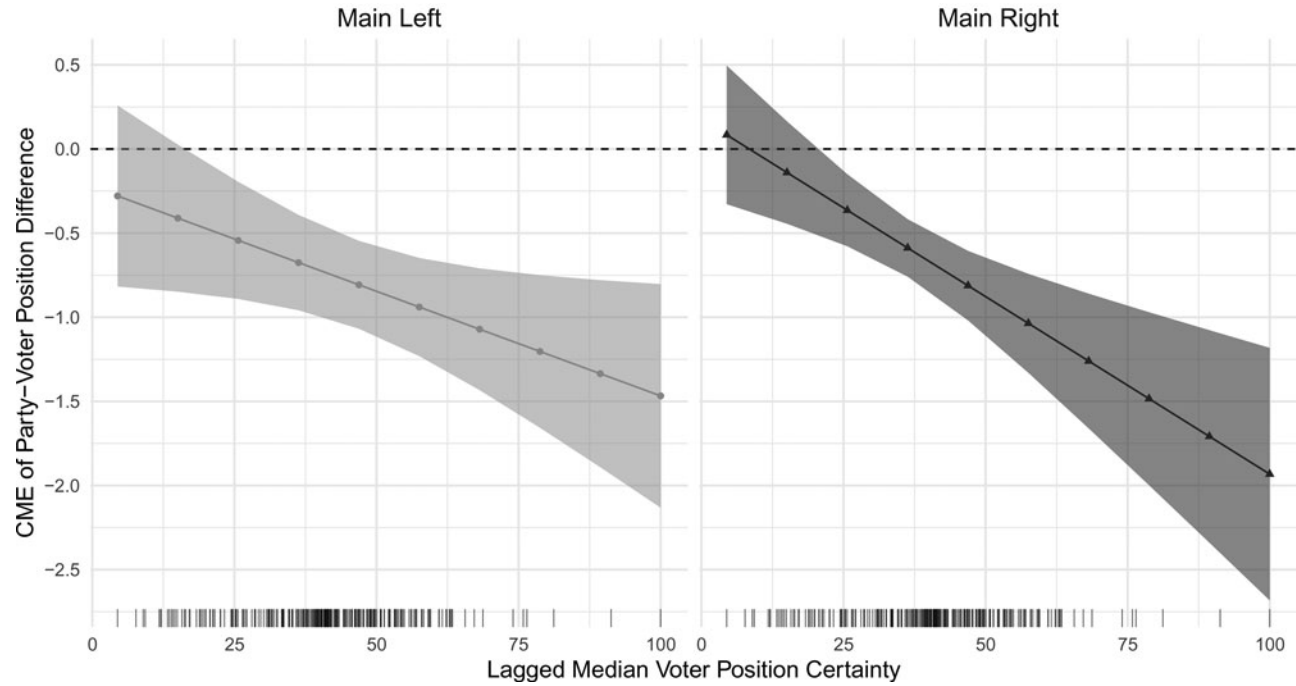
Figure 6. Average marginal effects of the difference between a main party and the median voter's positions in the previous election on the change in the main party's position between the two elections. Estimates for the main left parties are shown in the left panel, and estimates for the main right parties are shown in the right panel. Confidence interval estimation same as in Fig. 5. Point and confidence-interval estimates are shown as dots or triangles on solid lines and grey shaded bands, respectively, and the sample distribution of the moderator is shown by the rugs at the bottom of each panel. Fixed effects estimates only.

Table 3. The effect of revealed median voter preferences on main-party distances

	FE			LDV		
	1	2	3	1	2	3
Median certainty	−0.14***	−0.16***	−0.10*	−0.09**	−0.09*	−0.09*
	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)
Distance (Lag)				0.42***	0.35***	0.29***
				(0.06)	(0.07)	(0.06)
Govt. partisanship		−0.08	0.06		0.19	−0.20
		(0.43)	(0.38)		(0.40)	(0.36)
Union density		−0.02	−0.11		0.07*	0.05
		(0.08)	(0.07)		(0.03)	(0.03)
Trade openness		0.08*	0.04		−0.03*	−0.04
		(0.04)	(0.04)		(0.01)	(0.02)
GDP Growth		0.82	1.23*		0.38	0.65
		(0.59)	(0.51)		(0.59)	(0.52)
Unemployment rate		−0.09	−0.05		−0.08	−0.32
		(0.31)	(0.28)		(0.19)	(0.19)
Left competitor			−7.78***			−6.00***
			(1.39)			(1.18)
Right competitor			−7.56***			−6.45***
			(1.18)			(1.21)
Voter turnout			0.17			0.02
			(0.12)			(0.05)
Party polarization			0.37			0.24
			(0.19)			(0.20)
Effective N. Parties			2.38**			2.22***
			(0.76)			(0.50)
Constant	25.58***	28.06	−4.36	15.09***	−5.91	30.04
	(4.21)	(42.50)	(39.32)	(3.76)	(39.43)	(35.83)
Country FE	✓	✓	✓	×	×	×
Year FE	✓	✓	✓	✓	✓	✓
N	298	256	247	297	255	247
R^2	0.39	0.41	0.57	0.33	0.34	0.49
Adj. R^2	0.19	0.17	0.37	0.17	0.16	0.33
Residual Std. Error	8.47	8.69	7.61	8.57	8.75	7.89
F Statistic	1.96***	1.73**	2.89***	2.13***	1.90***	3.00***

Notes: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; Heteroscedasticity-consistent standard errors clustered by country in brackets.

When it comes to the control variables, there are again two things to note. First, the existence of left and right competitors to the main two parties promotes convergence. Second, a greater effective number of parties leads to divergence. But the main implication of the results in Table 3 is once more that there is empirical support for our main hypothesis: greater clarity about the position of the median voter is associated with more ideological convergence between the main parties in the subsequent election. More concretely, a ten-unit increase in the certainty of the median voter's position (similar to the real-life change in the US between the 2004 and 2008 presidential elections) is associated with a one-unit decrease in the distance between the main parties (about the same as the convergence of the main parties in the UK between the general elections of 2010 and 2015).

We discuss several robustness tests in the Online Appendix. First, we present a more technical exploration of different measurements and model specifications. We replicate our main results using log-ratio scales (Lowe et al. 2011) and kernel regression estimates of the conditional marginal effect of the median voter position depending on median voter certainty (Hainmueller, Mummolo, and Xu 2018). To address common issues in observational studies, we also adopt a statistical machine learning approach (generalized random forest or causal forest) that is designed to provide an efficient and consistent estimation of common and heterogeneous effects against selection bias and clustering (Athey, Tibshirani, and Wager 2019; Athey and Wager 2019).

This analysis confirms our main results even when using a non-parametric flexible approach to identification that minimizes assumptions.

We then focus on more theoretically relevant alternatives. In the Online Appendix we check the sensitivity of our results to country coverage and/or time period by providing jackknife regression estimates (we drop one country at a time); period-specific, split-sample estimates (we split our sample into the pre- and post-1990 periods); and estimating a set of regressions of the key parameters using a fifty-year sliding window on the complete sample (thirty-four country cases with consistent observations between the 1940s and the 2010s, *N*=385). We also test whether the general dispersion in the electorate (standard deviation in voter positions as in Adams et al. 2004) rather than specific uncertainty around the median voter's position matters to our results. And we explore the possibility that our uncertainty measure might be a mechanical consequence of party/electoral system factors (for example, majoritarian systems with fewer parties may produce more certainty about the median voter). But we find few correlations between the total number of parties and median voter certainty, and controlling for party/electoral system makes little difference for our main results. Finally, we address whether the amount of time spent between elections plays a significant role in amplifying/attenuating the effects of uncertainty about the position of the median voter. Here, we introduce an interaction with a variable measuring the number of months between two consecutive elections in each country and find that it makes little difference to our main findings.[20]

Conclusions

Generations of scholars have tried to understand why parties put electoral goals first or why they put policy goals first. Many parties in democracies face a stark and difficult dilemma when they decide whether to prioritize one goal over the other: if they change their policies to appeal to pivotal voters, they give up their long-term policy commitments and risk alienating their most loyal supporters; if they stick to their preferred policies, they face a high risk of losing elections. Understanding how parties approach this problem is an important task for political science.

Many answers have been offered, from Downs's insight that parties need to balance their short-term incentives to change policies and their long-term incentives to send a clear ideological signal to voters by sticking to their earlier commitments, via studies of party organizations that emphasize the need for party leaders to be responsive to members and activists, and studies of the incentives for parties to mobilize core voters, to contemporary unified theories of party competition (Adams, Merrill, and Grofman 2005a). However, we offer a different answer, which is based on a dynamic interpretation of insights from game-theoretic models of party competition. Our empirical findings suggest that when main parties decide their electoral strategies, they pay attention to the revealed preference of pivotal voters in the previous election. If that signal is clear, it shapes policy proposals in the subsequent election. Our interpretation – which is consistent with the insights from formal models with partisan politicians acting under uncertainty – is that party leaders prioritize electoral goals when the electoral costs and benefits are especially clear to them, but they prioritize partisan goals when they are uncertain about those costs and benefits.

These findings are important in their own right, since they suggest, using a new empirical approach, that changes in the position of the median voter matter for how parties behave in the future. These findings also have important implications for long-standing debates about how political parties operate, the nature of party competition, and democratic responsiveness. In particular, our argument and results combine the ideas that are captured by models of dynamic representation – such as the 'thermostatic' model proposed by (Wlezien 1995) – with the idea that parties are autonomous organizations that pursue their own partisan policy goals.

---

[20]As mentioned above, our results do not confirm Somer-Topcu (2009): once uncertainty is taken into consideration, the effects of the previous election do not dissipate after about 32 months.

When it becomes especially clear to parties that they are out of sync with public opinion, thermostatic mechanisms kick in and the parties approach the median voter. However, when it is harder for party leaders to infer electoral costs and benefits from the results of the previous election, parties rely on their core constituencies.

We conclude by recognizing that an important limitation of our approach concerns the focus on the electoral stage. Austen-Smith and Banks (1988) argue that a multi-party representative system is characterized by a social-choice mechanism intended to aggregate individual preferences in four stages: (i) a pre-electoral stage (when the parties position themselves in the policy space); (ii) elections (when voters decide which parties to vote for); (iii) coalition formation (when parties may enter into a contract to govern); and (iv) legislation (when policy is adopted). As Schofield and Sened (2006) argue, a comprehensive model of a multi-party democracy should include all four stages since actors may, in effect, look at the expected outcomes and go through a process of backward induction to determine their strategies. The main intuition in Schofield and Sened (2006), for example, is that under proportional representation, 'pure vote maximisation' is moderated by party strategies that consider the logic of strategic coalition formation after the election. Under a plurality rule, they argue, parties tend to consider coalitions before the election with a consequent degree of competition (and lack of moderation) between activists. Since our main focus is on the electoral stage, we pay less attention to the other stages in this paper – except by trying to control for some of their implications in our empirical analysis. Extending the argument to other stages of the political process, theoretically and empirically, is a promising avenue for future research.

References

Abou-Chadi T and Stoetzer LF (2020) How parties react to voter transitions. *American Political Science Review* **114**(3), 940–945.

Adams J and Merrill S (2006) Why small, centrist third parties motivate policy divergence by major parties. *American Political Science Review* **100**(3), 403–17.

Adams J and Somer-Topcu Z (2009a) Moderate Now, Win votes later: The electoral consequences of parties' policy shifts in 25 postwar democracies. *The Journal of Politics* **71**(2), 678–92.

Adams J and Somer-Topcu Z (2009b) Policy adjustment by parties in response to rival parties' policy shifts: Spatial theory and the dynamics of party competition in twenty-five post-war democracies. *British Journal of Political Science* **39**(04), 825–46.

Adams JF, Merrill III S and Grofman B (2005a) *A Unified Theory of Party Competition.* Cambridge: Cambridge University Press.

Adams JF, Merrill S and Grofman B (2005b) *A Unified Theory of Party Competition: A Cross-National Analysis Integrating Spatial and Behavioral Factors.* Cambridge, UK: Cambridge University Press.

Adams J, Haupt AB and Stoll H (2009) What moves parties? The role of public opinion and global economic conditions in Western Europe. *Comparative Political Studies* **42**(5), 611–39.

Adams J et al. (2004) Understanding change and stability in party ideologies: Do parties respond to public opinion or to past election results? *British Journal of Political Science* **34**(04), 589–610.

Aldrich JH (1983) A Downsian spatial model with party activism. *The American Political Science Review* **77**(4), 974–90.

Alvarez RM (1998) *Information and Elections*. Ann Arbor: University of Michigan Press.

Armingeon K et al. (2012) *Comparative Political Data Set I 1960–2010*. Bern: Institute of Political Science, University of Bern.

Athey S and Wager S (2019) Estimating treatment effects with causal forests: An application. *Observational Studies* **5**(2), 37–51.

Athey S, Tibshirani J and Wager S (2019) Generalized random forests. *The Annals of Statistics* **47**(2), 1148–78.

Austen-Smith D and Banks J (1988) Elections, coalitions, and legislative outcomes. *The American Political Science Review* **82**(2), 405–22.

Bartels L (1986) Issue voting under uncertainty: an empirical test. *American Journal of Political Science* **30**(4), 709–28.

Bartels L (2008) *Unequal Democracy*. Princeton, NJ: Princeton University Press.

Becher M (2016) Endogenous credible commitment and party competition over redistribution under alternative electoral institutions. *American Journal of Political Science* **60**(3), 768–82.

Budge I and Hofferbert RI (1990) Mandates and policy outputs: US party platforms and federal expenditures. *The American Political Science Review* **84**(1), 111–31.

Budge I, Ezrow L and McDonald MD (2010) Ideology, party factionalism and policy change. *British Journal of Political Science* **40**(4), 781–803.

Budge I et al. (2012) *Organizing Democratic Choice*. Oxford: Oxford University Press.

Calvert RL (1985) Robustness of the multidimensional voting model: Candidate motivations, uncertainty, and convergence. *American Journal of Political Science* **29**(1), 69–95.

Chappell Jr HW and Keech WR (1986) Policy motivation and party differences in a dynamic spatial model of party competition. *American Political Science Review* **80** (3):881–99.

Cleveland WS (1979) Robust locally weighted regression and smoothing scatterplots. *Journal of the American Statistical Association* **74**(368), 829–36.

Cox GW (1990) Centripetal and centrifugal incentives in electoral systems. *American Journal of Political Science* **34**(4), 903–35.

Cox GW (2009) Swing voters, core voters, and distributive politics. In Shapiro I, Stokes S, Wood E and Kirshner AS (eds), *Political Representation*. Cambridge: Cambridge University Press, 342–57.

Cox GW and McCubbins MD (1986) Electoral politics as a redistributive game. *Journal of Politics* **48**, 370–89.

Dalton RJ (2008) The quantity and the quality of party systems: Party system polarization, its measurement, and its consequences. *Comparative Political Studies* **41**(7), 899–920.

Dixit A and Londregan J (1996) The determinants of success of special interests in redistributive politics. *Journal of Politics* **58**, 1132–55.

Downs A (1957) *An Economic Theory of Democracy*. New York: Harper & Row.

Erikson RS, MacKuen MB and Stimson JA (2002) *The Macro Polity*. Cambridge: Cambridge University Press.

Ezrow L, Homola J and Tavits M (2014) When extremism pays: Policy positions, voter certainty, and party support in postcommunist Europe. *The Journal of Politics* **76**(2), 535–47.

Ezrow L et al. (2011) Mean voter representation and partisan constituency representation: Do parties respond to the mean voter position or to their supporters? *Party Politics* **17**(3), 275–301.

Ezrow L et al. (2021) Follow the foreign leader? Why following foreign incumbents is an effective electoral strategy. *Party Politics* **27**(4), 716–729.

Feddersen TJ, Sened I and Wright SG (1990) Rational voting and candidate entry under plurality rule. *American Journal of Political Science* **34**(4), 1005–16.

Gabel MJ and Huber JD (2000) Putting parties in their place: Inferring party left-right ideological positions from party manifestos data. *American Journal of Political Science* **44**(1), 94–103.

Gehlbach S (2013) *Formal Models of Domestic Politics*. Cambridge, UK: Cambridge University Press.

Gilens M (2012) *Affluence & Influence: Economic Inequality and Political Power in America*. Princeton, NJ: Princeton University Press.

Gilens M and Page BI (2014) Testing theories of American politics: Elites, interest groups, and average citizens. *Perspectives on Politics* **12**(3), 564–81.

Hainmueller J, Mummolo J and Xu Y (2018) How much should we trust estimates from multiplicative interaction models? Simple tools to improve empirical practice. *Political Analysis* **27**(2), 163–192.

Healy A and Lenz GS (2014) Substituting the end for the whole: Why voters respond primarily to the election-year economy. *American Journal of Political Science* **58**(1), 31–47.

Healy A and Malhotra N (2009) Myopic voters and natural disaster policy. *American Political Science Review* **103**(3), 387–406.

Hellwig T and Marinova DM (2015) More misinformed than myopic: Economic retrospections and the voter's time horizon. *Political Behavior* **37**(4), 865–87.

Karreth J, Polk JT and Allen CS (2013) Catchall or catch and release? The electoral consequences of social democratic parties' march to the middle in Western Europe. *Comparative Political Studies* **46**(7), 791–822.

Kim H and Fording RC (2003) Voter ideology in western democracies: An update. *European Journal of Political Research* **42**(1), 95–105.

Laakso M and Taagepera R (1979) Effective number of parties. *Comparative Political Studies* **12**(1), 3–27.

Lindbeck A and Weibull JW (1987) Balanced-budget redistribution as the outcome of political competition. *Public Choice* **52**(3), 273–97.

Lindvall J and Rueda D (2018) Public opinion, party politics, and the welfare state. In Manow P, Palier B and Schwander H (eds), *Welfare Democracies and Party Politics: Explaining Electoral Dynamics in Times of Changing Welfare Capitalism.* New York: Oxford University Press, 89–118.

Lindvall J, Rueda D and Zhai H (2023) Replication Data for: When Parties Move To The Middle: The Role Of Uncertainty. Available from https://doi.org/10.7910/DVN/YPZFEK, Harvard Dataverse, V1.

Lowe W et al. (2011) Scaling policy preferences from coded political texts. *Legislative Studies Quarterly* **36**(1), 123–155.

Meguid BM (2005) Competition between unequals: The role of mainstream party strategy in niche party success. *American Political Science Review* **99**(03), 347–59.

Müller WC and Strøm K (eds) (1999) *Policy, Office, or Votes?* Cambridge, UK: Cambridge University Press.

Nagel JH and Wlezien C (2010) Centre-party strength and major-party divergence in Britain, 1945–2005. *British Journal of Political Science* **40**(2), 279–304.

Nickell SJ (1981) Biases in dynamic models with fixed effects. *Econometrica* **49**, 1417–26.

Powell GB (1982) *Contemporary Democracies.* Cambridge, MA: Harvard University Press.

Powell GB (2000) *Elections as Instruments of Democracy: Majoritarian and Proportional Visions.* New Haven, CT: Yale University Press.

Roemer JE (1994) A theory of policy differentiation in single issue electoral politics. *Social Choice and Welfare* **11**(4), 355–80.

Roemer JE (1997) Political-economic equilibrium when parties represent constituents: The unidimensional case. *Social Choice and Welfare* **14**(4), 479–502.

Roemer JE (2001) *Political Competition.* Cambridge, MA: Harvard University Press.

Sartori G (1976) *Parties and Party Systems.* Cambridge, UK: Cambridge University Press.

Schofield N and Sened I (2006) *Multiparty Democracy: Elections and Legislative Politics.* Cambridge, UK: Cambridge University Press.

Shepsle KA (1972) The strategy of ambiguity: Uncertainty and electoral competition. *American Political Science Review* **66**(2), 555–68.

Sjöblom G (1968) *Party Strategies in A Multiparty System.* Lund: Studentlitteratur.

Somer-Topcu Z (2009) Timely decisions: The effects of past national elections on party policy change. *The Journal of Politics* **71**(1), 238–48.

Soroka SN and Wlezien C (2010) *Degrees of Democracy: Politics, Public Opinion, and Policy.* Cambridge, UK: Cambridge University Press.

Spoon J-J and Klüver H (2019) Party convergence and vote switching: Explaining mainstream party decline across Europe. *European Journal of Political Research* **58**(4), 1021–42.

Stimson JA, MacKuen MB and Erikson RS (1995) Dynamic representation. *American Political Science Review* **89**(03), 543–65.

Stokes SC et al. (2013) *Brokers, Voters, and Clientelism: The Puzzle of Distributive Politics.* Cambridge: Cambridge University Press.

Strøm K (1990) A behavioral theory of competitive political parties. *American Journal of Political Science* **34**(2), 565–98.

Volkens A et al. (2019) The Manifesto Data Collection. Manifesto Project (MRG/CMP/MARPOR). Version 2019b. Berlin: Wissenschaftszentrum Berlin für Sozialforschung (WZB). https://doi.org/10.25522/manifesto.mpds.2019b.

Warwick P and Zakharova M (2013) Measuring the median: the risks of inferring beliefs from votes. *British Journal of Political Science* **43**(1), 157–75.

Wheatley J and Mendez F (2021) Reconceptualizing dimensions of political competition in Europe: A demand-side approach. *British Journal of Political Science* **51**(1), 40–59.

Wittman D (1977) Candidates with policy preferences: A dynamic model. *Journal of Economic Theory* **14**(1), 180–9.

Wlezien C (1995) The public as thermostat: Dynamics of preferences for spending. *American Journal of Political Science* **39**(4), 981–1000.

Zur R (2021) Stuck in the middle: ideology, valence and the electoral failures of centrist parties. *British Journal of Political Science* **51**(2), 706–23.